RESEARCH REPORT

INNOVATION IN PRACTICE: KEYS TO ALTERNATIVE DEVELOPMENT STANDARDS

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Innovation in Practice: Keys to Alternative Development Standards

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Abstract

This study aimed to find ways to accelerate innovation in residential land use. Due to the widening gap between subdivision standards and demographically-driven housing needs, the obstacles to challenging established rules and regulations (fighting city hall), and the fact that few initiatives have made significant headway into modifying standards, this research sought *keys* to how innovative standards get introduced. The primary objective was to isolate critical factors enabling alternative development standards (ADS) according to developers who have succeeded in introducing ADS, as well as municipal officials involved in these projects. As a secondary objective, interviewees were asked for ideas on how to address complex regional scale (off-site) standards, such as those affecting stormwater, arterial road, school and park infrastructure.

Interviews produced practical advice and strategies on how to successfully alter standards, which should assist future ADS proposals. Even more important, close inspection of this information revealed keys to successful initiatives, namely that proponents instinctively nurtured four critical conditions: (1) clear rationale for and presentation of proposals, (2) municipal receptivity, (3) ability to support an extended approval process, and (4) readiness of the housing market for alternative housing and community forms. Notably, proponents *cultivated* these key conditions rather than regard their absence as barriers to innovation.

Concrete suggestions for how to change off-site standards were elusive, however a clear picture of deterrents to evolution of these standards emerged. Major deterrents include adherence to "Cadillac" standards, lack of leadership, and most importantly, lack of information and communication, especially the *availability* of concise and relevant information and effective information exchange. Better information alone, particularly concerning who really pays for the full costs of expensive off-site infrastructure, would be productive.

Developers, municipalities and higher-order levels of government each can uniquely contribute to the move towards more affordable, community-minded, and environmentally sustainable land use standards. Recommendations are provided for each group that can, if implemented, accelerate the adoption of innovative standards so that they can better keep pace with changing housing needs.

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Others also provided information throughout the study and reviewed the final documents. Their input is also appreciated.

Executive Summary

Development standards, as a rule, strictly control the servicing and subdivision of residential developments, specifying everything from the size of parks and location of buried services to road widths and building setbacks. Their capacity to guarantee specified levels of service is both their virtue and their curse, for their tendency to apply worst-case protection to all sites can lead to excessive land consumption and over-engineering in many situations. Hence, many blame standards not only for unnecessarily driving up housing costs, but also for sprawled, segregated community designs that lead to car dependence, relentless pressure on remaining natural and agricultural lands, lack of housing choices, and garage-dominated, monotonous subdivisions.

Alternative Development Standards (ADS) have been proposed as capable of providing more cost-effective, flexible and sensitive planning and engineering tools. Although recently ADS have become lost in new urbanism, they nevertheless have the ability to improve housing affordability while maintaining quality, support protection of environmentally sensitive areas, respond better to changing housing needs, and enable more sustainable forms of development.

With a view to promoting innovation in residential development, this study looked for key conditions, arguments or strategies associated with projects that had succeeded in altering development standards. By asking developers and approval authorities what led to the approval of ADS, it was hoped that critical factors could be isolated that would stimulate stronger proposals and further initiatives in this area, and accelerate the move towards more efficient, flexible cost-effective and sustainable development patterns.

As a secondary objective, while consulting with those involved in innovative residential developments, we took the opportunity to ask for recommendations concerning off-site (regional scale) standards of much current interest, such as school, park, stormwater infrastructure and arterial road standards. These have a major impact on both the cost of purchasing a home as well as ongoing municipal costs, a significant burden for property taxpayers.

Based on the experiences of seasoned entrepreneurs and approval authorities, effective ways to approach ADS proposals was deduced. The proponents interviewed had an instinctive understanding of the need to promote four necessary conditions in order for an ADS proposal to have a good chance of approval. These include: clear rationale and presentation of the proposal, an ability to invest higher than average resources into the project, and receptivity of the municipality and the housing market. Perhaps most importantly, proponents set out to cultivate these conditions rather than regard their absence as barriers. The site- and situation-specific strategies used to foster these conditions provide many practical solutions that should assist others interested in pursuing ADS.

Concerning off-site standards, few concrete suggestions emerged on either specific changes that should be made or on how to proceed. We did, however, get a picture of where some of the key difficulties for off-site standards lie, and a sense of how to address them. These fall into three categories: adherence to "gold-plated" standards, insufficient information and communication, and lack of leadership and direction. The single biggest impediment to the evolution of efficient off-

site standards was found to be the availability of concise and useful information. This puts the onus on higher levels of government (or their designates) to improve communication and get essential information into the hands not only of professionals, but of the ultimate decision makers, i.e. municipal politicians and the home buying public. Better information and exchange would solve many of the problems that limit innovation of both on- and off-site standards.

Municipal governments are the appropriate agencies to initiate and lead the review of regional standards. The scale and implications of regional standards requires the manpower and resources of a public corporation. Furthermore, local governments can expect financial and other benefits as a result of incorporating alternative off-site standards, particularly in operations and maintenance expenses drawn from annual property taxes.

In addition to isolating keys to successful ADS initiatives and providing targeted recommendations to accelerate progress, built ADS projects provide persuasive arguments for taking ADS further. In particular:

- Municipal representatives tended to be even more satisfied with the ADS built than were the developers, which should strengthen the case for private sector ADS proposals;
- It is not uncommon for municipalities, having approved ADS for a specific site, to go on to revise their development standards on a city-wide basis; and
- Feelings were expressed on the part of both developers and approval authorities that even further reductions to on-site standards were desirable.

Despite many actionable findings, there remain dilemmas that impede progress to more efficient standards, including:

- How to pay for monitoring studies to assess the performance of ADS;
- How to fairly compare alternative with conventional standards using accounting systems that do not accurately calculate costs and benefits, which can be diffuse and long-term;
- How to motivate government agencies to take action; and
- The need for strong government leadership versus the need for collegial working relationships.

This study succeeded in identifying they key elements associated with successful ADS projects. By differentiating the targets or necessary conditions from "field tested" techniques for cultivating them, it de-mystifies the innovation process and should support more systematic and effective future ADS initiatives. It also identifies the main barriers to innovation and recommends what developers, municipalities and higher-order levels of government can do to advance standards that are more germane to today's housing challenges.

RÉSUMÉ

Les normes d'aménagement, en règle générale, contrôlent étroitement la viabilisation et la subdivision des projets résidentiels, précisant tout à partir de la taille des parcs et de l'emplacement des services enfouis, aux largeurs des routes et aux marges de recul des bâtiments. Leur capacité de garantir des niveaux précis de service est à la fois leur avantage et leur inconvénient, car leur tendance à prévoir une protection contre les pires éventualités pour tous les sites peut, souvent, entraîner une utilisation excessive de terrain et l'établissement de normes d'ingénierie dépassant les besoins. C'est pourquoi beaucoup de gens reprochent aux normes de non seulement faire augmenter inutilement le coût des maisons, mais de contribuer aussi à la conception de modèles de collectivités étalées et séparées, qui entraînent une dépendance à l'automobile, une pression constante sur les terres naturelles et agricoles résiduelles, des choix de logement insuffisants, et des lotissements monotones dominés par la présence de garages.

On a proposé d'établir de nouvelles normes d'aménagement capables de fournir des outils de planification et d'ingénierie plus efficients, flexibles et sensibles. Même si les nouvelles normes d'aménagement ont récemment disparu des nouveaux concepts d'urbanisme, elles ont néanmoins la capacité d'améliorer l'abordabilité des logements tout en maintenant leur qualité, d'appuyer la protection des régions écologiquement sensibles, de mieux s'adapter à l'évolution des besoins de logement et de permettre des concepts de développement plus durable.

Dans le but de promouvoir l'innovation dans l'aménagement domiciliaire, cette étude a tenté de trouver les conditions, les arguments ou les stratégies clés associés aux projets qui ont réussi à modifier les normes d'aménagement. En demandant aux promoteurs immobiliers et aux autorités responsables des approbations quels éléments ont entraîné l'autorisation des nouvelles normes d'aménagement, on espérait pouvoir isoler les facteurs décisifs qui stimuleraient la création de propositions plus solides et d'initiatives additionnelles dans ce domaine, et qui accéléreraient la tendance vers la conception de modèles d'aménagement plus efficaces, flexibles, rentables et durables.

Comme objectif secondaire, tout en consultant les personnes intervenant dans la conception d'aménagements résidentiels novateurs, nous avons profité de l'occasion pour demander des recommandations concernant les normes d'aménagement au niveau de la collectivité (échelle régionale), d'intérêt très actuel, comme les normes visant les écoles, les parcs, l'infrastructure de régulation des eaux pluviales et les grandes voies de communication. Ces normes ont d'importantes répercussions à la fois sur le coût d'achat d'une maison et sur les taxes municipales, un lourd fardeau pour les contribuables propriétaires.

L'expérience d'entrepreneurs et des autorités responsables des approbations nous a permis de mettre au point des moyens efficaces de traiter les propositions visant les nouvelles normes d'aménagement. Les personnes interrogées comprenaient tout à fait la nécessité de promouvoir les quatre conditions essentielles pour qu'une proposition ait de bonnes chances d'être approuvée, à savoir, une justification et une présentation claires de la proposition, la capacité d'investir des ressources supérieures à la moyenne dans le projet, et la réceptivité de la municipalité et du

marché de l'habitation. Facteur peut-être le plus important, les proposants ont entrepris de cultiver ces conditions plutôt que de percevoir leur absence comme un obstacle. Les stratégies adaptées au site et à la situation qui ont servi à promouvoir ces conditions offrent de nombreuses solutions pratiques qui devraient aider d'autres groupes désireux de proposer de nouvelles normes d'aménagement.

Quant aux normes d'aménagement au niveau de la collectivité, on a formulé quelques suggestions concrètes concernant des modifications précises devant être apportées, ou la façon de procéder. On nous a toutefois donné une idée des éléments où résident certaines des principales difficultés et de la façon de les aborder. Elles se classent dans trois catégories : le respect de normes « plaquées or », une information et une communication insuffisantes, et un manque de leadership et d'orientation. Le plus important obstacle à l'évolution de normes efficaces d'aménagement au niveau de la collectivité s'est révélé être la disponibilité de renseignements concis et utiles. Il revient donc aux paliers supérieurs de gouvernement (ou à leurs représentants) d'améliorer la communication et de transmettre l'information essentielle non seulement aux professionnels, mais aussi aux décideurs clés, c'est-à-dire les politiciens municipaux et les acheteurs de maisons. En améliorant l'information et la communication, on pourrait résoudre un grand nombre des problèmes qui nuisent à l'établissement de nouvelles normes d'aménagement tant au niveau des lotissements individuels qu'au niveau de la collectivité.

Les gouvernements municipaux sont les organismes compétents pour entreprendre et diriger l'examen des normes régionales. La portée et les répercussions des normes régionales nécessitent l'effectif et les ressources d'une société publique. De plus, les gouvernements locaux peuvent s'attendre à ce que l'intégration de nouvelles normes d'aménagement régionales leur procure des avantages financiers et d'autres avantages, notamment au niveau des dépenses d'exploitation et d'entretien provenant des impôts fonciers annuels.

En plus de fournir les principaux éléments associés à la réussite d'initiatives conçues en fonction de nouvelles normes d'aménagement et de fournir les recommandations visées pour accélérer le processus, les projets conçus à l'aide de nouvelles normes d'aménagement offrent de solides arguments pour convaincre les parties intéressées de « pousser un peu plus loin » les nouvelles normes d'aménagement. Plus précisément :

- les représentants municipaux avaient tendance à être plus satisfaits des projets construits en fonction des nouvelles normes que ne l'étaient les promoteurs immobiliers, ce qui devrait avantager les propositions du secteur privé utilisant les nouvelles normes d'aménagement;
- il n'est pas rare pour les municipalités qui ont approuvé de nouvelles normes d'aménagement pour un site précis, d'aller jusqu'à réviser leurs normes d'aménagement pour l'ensemble de la ville;
- tant les promoteurs immobiliers que les autorités responsables des approbations ont estimé qu'il serait souhaitable d'assouplir davantage les normes établies au niveau des lotissements individuels.

Malgré de nombreuses conclusions auxquelles on peut donner suite, il reste néanmoins des dilemmes qui nuisent à l'élaboration de normes plus efficaces, à savoir :

- comment payer le coût des études de suivi visant à évaluer le rendement des nouvelles normes d'aménagement;
- comment comparer équitablement les nouvelles normes aux normes conventionnelles à l'aide de systèmes comptables qui ne calculent pas avec précision les coûts et les avantages, qui peuvent être diffus et à long terme;
- comment motiver les organismes gouvernementaux à passer à l'action;
- la nécessité d'une direction gouvernementale énergique par opposition à la nécessité d'un système de décision collégiale.

Cette étude a réussi à définir les principaux éléments associés à la réussite de projets utilisant de nouvelles normes d'aménagement. En faisant la distinction entre les objectifs visés ou les conditions nécessaires, et les moyens utilisés pour atteindre ces objectifs, elle démystifie le processus d'innovation et favorise d'éventuels projets plus systématiques et efficaces utilisant de nouvelles normes d'aménagement. Elle détermine aussi les principaux obstacles à l'innovation et formule des recommandations sur les mesures que les promoteurs, les municipalités et les niveaux supérieurs de gouvernement peuvent prendre pour proposer des normes qui correspondent davantage aux défis actuels dans le domaine du logement.

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1. Introduction

Purpose

There is an adage in the real estate industry that it is never wise to be "the first" to try anything new. The preference is, rather, to let someone else take the initiative and see whether they make it safely through the minefield of the development approval process. Then, after the path has been cleared and deemed safe, the latest in community design and amenities flood the marketplace.

Getting a conventional plan of subdivision through the approvals process is long and tortuous enough without asking for deviations from standard practice. Questioning any of the well-entrenched development standards, which control everything from the size of parks to the location of buried utilities, is a headache at best and a risky prospect for sure. In the highly politicized, highly regulated and high-stakes development industry, where permanence of construction means there is little room for experimentation, and in an industry suffering from far too little information exchange, most developers would not consider proposing housing projects that differ from convention even if they may be more affordable, better suited to the needs of modern households, transit friendly, or otherwise more environmentally, socially and economically prudent.

Of course, there will always be entrepreneurs, and though few pioneering initiatives have resulted in really novel ideas getting all the way through the approval process and built, some have succeeded. This study draws on the experiences of the proponents and regulatory authorities who have overcome conventional standards to introduce innovative residential developments featuring more efficient, flexible, sustainable or cost-effective development patterns.

The main objective of this study was to determine if there are specific strategies, arguments or conditions that are common to projects that have successfully introduced alternative development standards (ADS). If critical steps or conditions can be identified concerning *how* change was achieved, they could lead to a better understanding of the innovation process in land use, and thereby support and promote further innovation. Even if no handful of key factors could be found, the collection of advice and anecdotes from entrepreneurs would provide useful tips and insights for others considering ADS.

A secondary objective took into consideration the high degree of interest, but even slower progress, on issues of regional or "off-site" development standards (e.g., the broader land dedications and infrastructure requirements for schools, parks and stormwater management infrastructure). Therefore, the investigation took the opportunity, while speaking with those who have demonstrated success in introducing land use innovations at the subdivision level, to ask for suggestions on specific directions, technical and administrative issues, and priorities that can improve innovation of regional scale standards.

Specifically, the following questions are addressed:
For objective (1):
- Are there key factors (e.g., steps, arguments or conditions) associated with projects that have succeeded in implementing alternative development standards?

- Are there pre-existing conditions that facilitate alternative standards?
- Does perspective or use of language differ between proponents and regulatory authorities, and does this hinder progress?
- In retrospect, how would a proposal for ADS be ideally approached?

For objective (2):
- What are the issues and challenges for providing regional scale standards (e.g., school, park, stormwater management and arterial road infrastructure), and where do the solutions lie?
- What would lead to a more effective, efficient, and fair infrastructure planning process?
- What data needs to be gathered or questions answered?
- Can the successful on-site ADS experiences offer clues on how to tackle off-site standards?

Definitions and Scope

There are misunderstandings about what ADS are and what they can achieve. These need to be cleared up before a meaningful discussion of ADS can proceed.

Misconceptions concerning ADS begin with their association with new urbanism or neo-traditional planning. Indeed, ADS have been utilized in new urbanism projects, however new urbanism is just one style of development, whereas ADS are tools that can be used to affect any style. Even worse, many people automatically associate rear lanes with new urbanism, and therefore many think that lack of privacy, vandalism, junk piles and higher costs that allegedly come with rear lanes are the inevitable result of ADS. The strong association of rear lanes with ADS, and the controversy surrounding their merit, leads many to think that unrealistic claims being made by ADS proponents. These leaps are not only misleading but quite damaging to the overall embrace of these innovative planning and engineering tools.

There are other negative connotations associated with ADS. Many people refer to "alternative" development standards as "reduced" standards, because often the alternative involves shorter/smaller/narrower measures compared to the conventional standard. This leads to the impression that ADS produce a lesser level of service, for example that the yard will be too small or the parking inadequate. Confounding the matter is that that these problems have indeed arisen, and on relatively high-profile projects, but they have more to do with oversights and errors than what ADS are all about, and do not accurately reflect what ADS can accomplish.

Development standards *are* the rules and regulations controlling how land is developed (in particular governing how land is subdivided and serviced). Standards may address planning (e.g., lot dimensions, building setback) and engineering (e.g., road width, utility servicing) issues, addressing items as small as curbs and streetlights on up to the network of park and stormwater management systems. Development standards are defined locally, which on one hand allows for flexibility for meeting varying needs, speedier approvals and local autonomy, but may on the other be regarded as a failure to uniformly adopt "best practices" (OHBA, 1997).

Standards guarantee specified minimum levels of service, however with this assurance come other problems. Standards can result in over-engineering in many circumstances, resulting in development patterns characterized by the separation of land uses and automobile dependence,

excessive land consumption that threatens environmentally sensitive and agricultural lands, monotony of streets with relatively few choices of housing types, and housing costs beyond the reach of many Canadians.

Alternative development standards are planning or engineering standards that are "new" or "innovative." They may attempt to replace or add to the repertoire of established standards in order to create development patterns that improve the efficiency of land use, the effectiveness of infrastructure, respect for environmental sensitivity, aesthetic qualities of neighbourhoods, and/or housing affordability and choice. It goes without saying that ADS projects aspire to improve housing and communities, not downgrade them. They may be adopted municipality-wide or, more commonly, on a site-specific basis, though, often ADS adopted at a site level eventually replace the conventional municipal-wide standard in time.

Off-site standards are those concerned with the broader infrastructure associated with development, including arterial roads, schools, stormwater management facilities and public buildings like firehalls, community centres and libraries. New developments contribute to the need for these services, but they are not always physically required on each development site, hence the term "off-site."

Research has estimated significant cost savings associated with the adoption of ADS. In 1990, ADS were estimated to reduce the cost of a dwelling unit by $4,000 to $6,000 (MoH, 1990). Blais (1996) estimated savings of $9,000 to $9,500 per unit as a result of more compact form and revised construction and design standards. Essiambre et. al. (1995) calculated that infrastructure emplacement costs *alone* could reduce housing costs by approximately $5,300 per residential unit for a subdivision incorporating ADS, and that over a 75-year life-cycle period, a total of approximately $11,000 could be saved on operations, maintenance and replacement costs. According to their calculations, this translates to $77 million in savings when spread over a community of 7,000 dwellings. An ADS project built in Ottawa-Carleton in 1993 attributed about $4,400 per unit to savings in the emplacement of infrastructure and utilities (RMOC, 1998).

It bears mentioning that whether or not something is "alternative" or "innovative" depends on its context. Something new in one jurisdiction may have already been adopted into conventional practice in another, or something new two years ago may be conventional today. For the principal objective of this study, it is not a matter of which standards were changed or by how much, but *how* changes to standards came about.

The scope of this study is limited to residential development projects, in particular, private-sector, for-profit initiatives. This is because the private sector initiates most residential development projects, and therefore private developers and municipal approval agencies are most in need of and likely to use, information and ideas on how to create successful ADS proposals and environments that welcome innovation.

Finally, it should be noted that ADS are but one form of innovation that can address current housing and land use challenges. Insights gained on this topic could have implications for research on innovation in other segments of the construction industry.

2. Methodology

The first step was to identify innovative residential development projects to be studied. To locate a diversity and representative sample of relevant projects, "Calls for Information" were published in various national, regional and local newspapers, newsletters and magazines in 1998.

Responses to these "Calls" were encouraging in that several inquiries were made asking for the results of the study. Insofar as locating relevant projects, however, this resulted in only one project being recommended. There is clearly more interest in finding and learning from innovative development projects than available projects to learn from.

The project team, then, was required to begin an active pursuit of projects to be investigated, in addition to several known to us already. The principal investigator looked for leads in documents[1], newsletters and journals, and telephoned major cities, provincial agencies and regional Canada Mortgage and Housing Corporation (CMHC) offices. We aimed for eight to ten projects from as many jurisdictions across Canada as possible. Preference was given to those that would produce fee simple, rather than condominium ownership, and that involved individuals with experience in more than one project or municipality. Projects had to be already built or undergoing construction, or at least approved.

We chose to interview individuals rather than use questionnaires. An informal, conversational approach was intended to give interviewees a chance to elaborate on what they felt was important. We suspected that some interviewees might have more of an intuitive rather than explicit sense of how to overcome the challenges inherent in changing ingrained standards, and that clues to success would be found hidden among more conspicuous observations. Furthermore, by inviting comments "off the record" and promising to protect the source of any incisive quotations, we hoped to uncover more potent information than would not have been the case with a "case study" approach. Therefore, while all of the interviewees are identified (Appendix 1), the results are presented in aggregate.

Eight projects were selected, with two individuals per project interviewed (the developer and a municipal representative, usually project planners but in two cases the engineer). All telephone interviews were conducted by the same person between November 1998 and July 1999. A list of questions was faxed to each interviewee before the discussions (Appendix 2).

The results below are presented in a manner that differentiates interviewees' observations from literature findings or deductions based on all available information. The male pronoun is used throughout the text to protect the identity of interviewees.

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[1] E.g. Ontario Ministry of Municipal Affairs and Housing, Breaking Ground. An Illustration of Alternative Development Standards in Ontario's New Communities (1997); Tomalty, R. and D. Pell, Sustainable Development and Canadian Cities: Current Initiatives, prepared for the Canada Mortgage and Housing Corporation and the Canadian Global Change Program (1994); and A-C-T (Affordability and Choice Today) Factsheets and Case Studies.

3. Projects Investigated

Fig. 1 describes the eight projects studied. They range in size and type, and include both high profile and lesser known projects.

In all of the projects investigated, the specific ADS proposed were put forward by the developer. In three cases, however, the municipality could be regarded as stimulating the ADS initiative in the sense that they wanted something different from the conventional product, i.e., rear-loading garage, alternative traffic pattern, and more parkland. One project was not approved, but is included because it predates many ADS initiatives, proposed alternative standards that were, at the time, radically different from established standards, and made considerable headway before it was withdrawn; hence it represents a good example of a pioneering effort that made strides in ADS.

It is noteworthy that despite our attempt to find projects representing most every region in Canada, residential projects that succeeded in altering development standards were found principally in the three provinces of Ontario, Alberta and British Columbia. The reasons for this are discussed in the results section 4.2. For the record, we spoke to at least one developer or municipal representative from Nova Scotia, New Brunswick, Prince Edward Island, Quebec, Manitoba and Saskatchewan, from which no projects materialized. A project in Quebec was identified but no interview occurred.

Fig. 1. Projects Studied

Project	Project Description	Development Standards Addressed	Other Descriptors
Upper Beach Valley Toronto, ON (Namara Developments Ltd.)	29 freehold semi-detached and townhomes (5,500 m^2)	1. parking in rear from one 16m r.o.w. to road r.o.w. of 12m and lane r.o.w. of 5.5m 2. front yard setback from 6m to 0.5m 3. setback from railway from 30m to 18m	• municipality requested rear parking; developer requested ADS for setbacks and road r.o.w. • redevelopment project • 0.5m setback characteristic of area housing
Village of Sherwood Vaughan, ON (The Sorbara Group)	46 semi-detached and 88 townhomes (15 acres)	1. r.o.w. width from 20m to 15m (from 8.5m to 7m pavement, two to one sidewalk, revised buried service locations) 2. revised daylighting triangles	• site dimensions and location needed ADS to achieve traffic flow and urban design objectives • site location and irregular configuration meant that conventional standards would have created traffic issues
Heart of Springdale Brampton, ON (The Daniels Corporation)	~ 1200 mixed single detached, 6 storey walkup and retail/ residential (40 acres)	1. r.o.w. width from 20m to 15.5m (two to one sidewalk, on-street parking, rear lane) 2. front yard setback from 6m to 3m or 4m 3. mixed land uses	• although this project was not approved, it is included because several ADS were negotiated; only 2 were unresolved when the project was withdrawn by the principal land-owner who was not the developer

Montgomery Village Orangeville, ON (The River Oaks Group)	700 single, semi, town and ground-oriented apartment units (250 acres)	1. r.o.w. width from 20m to 16m 2. rear lane 3. lot frontges 6m townhomes; 9m single family detached 4. front yard setback from 6m to 3m 5. overland storm conveyance and storage	• ADS initiated by developer • one of the first examples of a community-scale development incorporating ADS • neo-traditional style
primarily **McKenzie Towne, also Tuscany** Calgary, AB (Carma)	~ 10,000 mixed units (2,400 acres) (McKenzie Towne) 4,000 units (800ac) (Tuscany)	1. pavement width from 10m to 9m 2. lane width from 8m to 6m 3. curb return radii from 9m to 4.5m (3m was requested) 4. studio suites above garage 5. roundabout intersection 6. creation of "major minor" (Tuscany) closer intersections and no turning bays	• ADS initiated by developer • since this project was approved, the municipality has produced a city-wide policy based on the neo-traditional concepts developed
primarily **Tanglewood, also Erin WoodsVillage and Elbow Valley** Calgary area, AB (Hopewell Residential Communities)	138 single detached and 40 multi (55 acres) (Tanglewood) 400 units (90ac) (Erin Woods V.) 1100 units (1000ac) (Elbow Valley)	1. stormwater treatment (Tanglewood) minimal site grading; uses natural topographic depressions and vegetation for infiltration versus gross collection and conveyance of stormwater 2. wide-shallow (Erin Woods Village) from ~9m x 33.5m to ~12m x 21.3m 3. several standards (Elbow Valley) e.g., street pavement from 9m to 6.7m	• ADS initiated by developer • pursued conventional owner-ship arrangements, but eventually approval required that public utilities and an environmental reserve fall under bare land condominium ownership (Tunglewood) • wide/shallow prompted by site dimensions (EWV)
Clover Valley Station Surrey, BC (Parklane Homes)	216 small lot single detached and 100 townhomes (~ 39 acres)	1. r.o.w. width from 20m to 15.25m 2. rear lane 3. backyard setback from 7.5m to 0.75m behind garage 4. side yard setback from 1.5m to 1.2m to house and 1m to garage 5. front yard setback from 7.5m to 3.6m 6. density/minimum lot size from 4 to 10 units per acre	• ADS initiated by developer • this municipality has amended by-laws based on alternative standards developed through this project
Rose Valley Properties Central Okanagan Regional District, BC (Pentar Homes)	350 single detached and 100 townhomes (182 acres)	1. r.o.w. width from 20m to 17m (14m was requested) 2. front yard setback from 6m to 4.5m 3. side yard setback from 2m to 1.2m 4. gross density frontage from 18m to 14m and introduction of townhomes in exchange for additional greenspace	• ADS mutually initiated by regional district and developer (district wanted more open space which it was willing to exchange for higher density) • this regional district is updating by-laws based on standards developed through this project

4. Results and Discussion

The section below addresses the questions posed by this research using primarily interviewees' observations, supplemented by information found in the literature.

Part 1. Site-Level ADS

4.1 Keys to alternative development standards

When asked what was *critical* to the approval of the ADS proposed, developers and municipal representatives identified a number of factors. These are listed in Fig. 2, along with the number of times they were named and by whom (i.e., developer or municipality). In some cases, items were stressed elsewhere in the discussion as important to the acceptance of the ADS; these are included as well.

This list of what interviewees considered critical to the success of the ADS projects appears, at first glance, to be an assortment of situations, actions, and approaches that are site- and situation-specific. However, a closer look suggests that most might be considered *strategies* employed to create or reinforce *conditions* common to all of the successful ADS projects we investigated. In other words, for the most part what interviewees identified were strategies that they used to strengthen critical conditions needed to make the proposed ADS a reality.

Four "critical conditions" appear to have been cultivated by developers in all of the projects investigated that successfully altered development standards. They were: (1) the ADS proposed were clear and well expressed, (2) the municipality was receptive, (3) the proponent was able to make an above-average investment in the project, and (4) the market had some need for an alternative housing product or community form.

(Two additional "critical conditions" were identified, however they fall outside the scope of our main objective, i.e., to find key steps that can be taken to support ADS initiatives. These two conditions: (1) the municipality has confidence in the developer, and (2) development pressure stimulates change, both must *preceed* the ADS proposal, and are therefore discussed separately (see section 4.2).)

It is significant that developers *cultivated* the four critical conditions as part of their ADS proposals. By the nature of these conditions, it is tempting to think that they would have to be pre-existing in order to have a chance of success (e.g., a municipality or housing market already receptive to innovative standards). However, this was not the case; proponents, rather than regard the absence of these conditions as barriers, instead actively set out to develop them.

Fig. 2 does not identify the four critical factors as such, but points to them. Taken literally, the critical factors identified by interviewees are rather examples of proven, field-tested strategies used to cultivate the conditions necessary for ADS to succeed. The boxes below illustrate how the strategies identified by interviewees were used to achieve the critical conditions that became apparent after considering everything together.

Fig. 2. Critical Factors as Identified by Interviewees

Critical Factor	Number of times identified as critical		Elsewhere in the discussion considered important	
	Developer	Municipality	Developer	Municipality
Situation				
• developer has good reputation, longstanding, trusted	2	3		
• proponent as builder & developer can offer comprehensive package		1		
• having someone within municipality champion the case	1	1	3	
• push from senior administration			1	1
• timing/trendy		1		1
• condominium site demonstrated adequate performance of unconventional standard	1		1	1
Purpose				
• clear goals, vision or big picture of proposed community	1	2		
• affordability platform	1	1		
• not really new			1	
• solves a problem, not just doing for the sake of it		1		
Preparation				
• lots of homework/preparation/examples of similar projects	1	2	2	
• use tours, photos of real sites	1	1	1	1
• informative presentation materials		2	1	
• drawings/demonstrations show how proposed standards work	1	1	2	
• high-profile and/or competent designer		2		
• address municipal liability concerns			1	
• traffic flow study to counter NIMBYism	1			
Negotiating Style				
• consultatory approach	1			
• respect municipality's thresholds (e.g., absolutely no rear lanes)	1	1		
• work *with* municipality on concerns (vs. having all worked out)	1			1
• work from top down (i.e., begin with highest ranking officials)	1			
• get politicians on side early	1		1	1
• systematically involve everyone involved at the start as a team				1
• early and full use of public input opportunities			2	
• small, effective working group (versus loaded-down process)		1		
• compromise	1			

• Clear Vision Purpose Reason for Alternative Standard

Necessary Condition	Strategies Reported to Improve Conditions
• proponent's ideas are well thought through • proposed ADS are clearly presented	• thorough, convincing preparation • understanding of conventional standards' intent • visits/visuals of proposed features or problems to be addressed • information emphasized over polish • experienced consultants

The developer must have a clear vision within his own mind and it must be clearly presented. A well articulated and strong vision will stand up to the many challenges the proposal will undoubtedly encounter during negotiations without losing its essence. As one municipal officer put it, standards (whether conventional or alternative) are strongly steeped in beliefs and assumptions, and this individual attributed one project's success largely to the articulation of the conventional and alternative standards' intent.

Larger projects attributed their success to the comprehensiveness of the vision, covering how the whole community functions through to the small physical details. A developer explained that in the excitement and momentum generated by an ADS project, it is easy to forget that municipal staff need time to get familiar with a proposal incorporating ADS. He felt that a lot of projects fail on this point, that proponents must do a great deal of "hand holding." He stressed: "There's no such thing as a stupid question."

Thorough preparation is obviously critical to a project's success, and can take many forms. One developer swore by laying everything out at the outset, while others stressed the importance of working the details out with the municipality step by step so that the municipality feels part of the process. A municipal representative concurred with the latter approach, explaining that city staff prefer to work out details together rather than be put into the position of reacting.

Another aspect of preparation is anticipating potential objections. For example, many of the projects studied were physically distanced from established neighbourhoods, minimizing the potential for NIMBYism (Not-In-My-BackYard-ism). Where there were adjacent neighbours, either the ADS matched features already in the area (e.g., rear lanes and reduced setback in a redevelopment project) or buffered established homes from the new development or offered an amenity (e.g., a school or a "strip of green" linear park around the perimeter of the site). These latter approaches were considered key to the success of one project. One developer conducted a traffic flow study to ward off NIMBYism.

Preparation can entail visits to sites featuring proposed standards, arranging early meetings with all key players, and taking full advantage of public input opportunities to understand and address public interests and concerns. Running the idea past senior administrators and even city councillors early in the process was considered critical to the success of some projects.

Visual materials such as photographs of previously built ADS projects, or highlighting undesirable features (e.g., excessive setback) were considered to be critical in some cases. Providing detailed architectural plans and elevations increased the comfort level with proposals, particularly among politicians and the public. Truly informative presentation materials were much favoured over "pretty" pictures or "flashy powerpoint presentations" with less substance. One developer presented early concepts on brown paper with handwritten text, and included a list of "the issues," in a successful bid to build rapport and mutual understanding with the public. This candidness can win over sceptics and deter NIMBYism.

Finally, consultants can assist a developer in solidifying a vision and presenting it to the various audiences. However, one interviewee warned that this would most likely have jeopardized his ADS project, where a solid, home-grown solution generated considerably more confidence in the proposal than an outside consultant could have brought in.

• Municipal Receptivity (Especially Engineering Works Department)

Essential Conditions	Strategies Reported to Improve Conditions
• municipality willing to experiment	• approach senior municipal staff first • approach politicians early in the process • find in-house champion within the city • identify precedents/experienced colleagues • visit sites with proposed features to demonstrate adequacy • respect municipality's thresholds

Officials do not always give ADS an open-arm welcome. Engineers, in particular, are often apprehensive of deviations from time-tested standards. Says one engineer of his profession: "We innovate infrequently because of our natural conservatism, fear of liability, and lack of funds for demonstration.... We are not overly proactive in seeking out technology and becoming aware of applications and benefits" (Field, 1992). Adversity to risk on the part of some municipal officials is not necessarily a criticism, but it is not particularly conducive to innovation. Despite a not-uncommon reluctance to experiment, however, there are ways to stimulate cooperation.

Some proponents approached senior levels of administration or city council before starting the formal approval process, and "push from senior administration" was cited more than once as the key to the serious consideration of ADS proposals. One developer felt that city staff can proceed with less hesitation if they know that councillors are aware of the proposal and open to it. This approach should be used cautiously, however, as in some cases it can lead to resentment among staff if proponents are seen as "circumventing proper channels."

Several projects benefitted from having a "champion" or municipal employee "on the inside" to escort the proposal through the more-complicated-than-usual review and approval process. Insiders understand what is going on behind the scenes and can identify issues early. The "champion" concept, which requires a staff person to be at least sympathetic if not driving, was frequently referred to, either a project had one or would have benefitted from one. Some interviewees indicated that a champion does not necessarily have to be a municipal employee, but could be a respected member of the community or a big name (e.g., Jane Jacobs, David Crombie) that endorses the general concept, or better still, assumes leadership. Leadership from higher levels of government was much desired, e.g., Ministry of Municipal Affairs and Housing (MMAH), CMHC.

It is very beneficial if municipal staff can be made aware of other municipalities where ADS have been built. Even if a different set of ADS were addressed, municipal officials valued contact with colleagues with prior ADS experience. A municipal engineer reported being comforted knowing they were not the first to "go out on a limb." Site visits can also be invaluable in proving that alternative standards can be adequate, for example that a fire truck can indeed manoeuvre a 6 metre wide lane. Concerning site visits, however, it is important that the sites have minimal flaws — all site have their flaws, but inevitably the weaknesses make the strongest impression even if they have nothing to do with the ADS proposed.

Finally, municipalities may have limits that are simply not negotiable. For example, some will absolutely not entertain rear lanes. Although it may be hard to decipher which standards are truly firm and which are negotiable, proponents must strive to recognize a municipality's limits.

• Developer Able to Withstand an Extended Approval Process

Essential Condition	Strategies Reported to Improve Conditions
• proponent able to devote above-average resources to the project (e.g., time, patience, money, expertise)	• a site with relatively low carrying costs • a site likely to require an extended approval time even without an ADS element • independence from outside investors • deep pockets can help • moderately, not highly, ambitions • consider condominium ownership of ADS portion

Several developers reported feeling that ADS projects took longer than expected, despite being prepared for a long haul. Two said they would not do it over again because the effort was too much for the gain. Interviewees alluded to many of the deterrents to innovation that Habitat and Archemy (1998) identified in studying obstacles to healthy housing, including the length of time, complexity and greater costs incurred to applicants, lack of adequate training for officials to evaluate unusual situations, and lack of adequate staffing to handle equivalencies in a timely manner.

The length of time from project conception to approval is inevitably longer for ADS projects than conventional ones, nevertheless there are ways to diminish the impact of the wait. The best ways involve taking advantage of special situations. For example, a site that has been sitting around awhile may not be under the same economic pressure and therefore might be able to withstand a longer than average turnaround time. For a site with unusual dimensions, it can be less costly overall to work out more fitting, site specific solutions as it would to struggle to make conventional standards work. Such a site may be a good candidate for ADS both because the time factor is a given and also because it may be better suited to more refined development standards.

Some interviewees recommended avoiding being too ambitious. Reducing the size of the parcel to feature ADS can enable the bulk of a site (with conventional standards) to financially carry the ADS portion of the project. Consecutive phases may add more ADS over time as their performance is tested and market receptivity evaluated. The degree to which conventional standards end up being altered, and the number that are addressed, are often determined along the way (which is why so many ADS initiatives end up severely watered down by the end). Hence the importance of strong vision, as noted earlier, along with sufficient resources required to work out solutions agreeable to everyone.

Deep pockets may help, but not necessarily. Outside investors may not be as committed to the project as necessary. In one case, even after considerable progress had been made, the uncertainty of the outcome of one project led the principal financier to withdraw support at the last minute.

Sometimes, despite the best beginnings, an ADS project can take a nosedive in the end, or simply run out of time. In that case, creating condominium ownership of the ADS portion of the project might be the only way to forestall failure (i.e., shared ownership of alternatively serviced portions of the development, with private ownership of individual homes and lots). Some regard condominiums as unable to have ADS (and even contrary to the movement towards ADS) because the municipality does not assume ownership of the services, and therefore should be used only as a last resort. However, condominium housing could have unique standards that complement ADS-type objectives, and can be credited with pushing the envelope of accepted practice by providing built examples of standards that may be evaluated and re-considered as municipal services at a later time.

• Market Receptivity

Essential Conditions	Strategies Reported to Improve Conditions
• home buyers open to new housing/lot/ street/community forms	• high quality marketing, with clearly stated benefits • comprehensive ADS package • full use of public input opportunities • utilize current trends, timing • trusted advocate or experienced consultant involved

The housing market undoubtedly influences a developer's decision to pursue ADS. However, although to some extent the market is a given and therefore beyond the control of the developer, to some extent the developer can modify market demand for ADS by responding to implicit needs, adapting products to meet them and marketing them astutely.

An environment in need of more affordable or diverse housing is one in which a proponent can cultivate a market for ADS. Obviously, speaking in terms of alternative standards can detract from a product's allure, whereas articulating specific benefits (e.g. pedestrian-friendly streets, increased affordability) is key. A strong marketing campaign is necessary to selling anything new or different, and the best ones go well beyond the sales pitch. For instance, some proponents enlisted local media to cover the project at various stages. This can increase awareness of the project and build interest and excitement, and most importantly enable the benefits of these "alternative communities" to be itemized and explained. This educational component has to be nurtured, particularly in the housing market which is quite conservative. (More on the role of the conservative nature of the market can be found in Section 4.5.)

A comprehensive ADS package lets all the parts work synergistically to offer the full benefits, which helps both municipal officials to understand the purpose of ADS proposed, and potential homebuyers to better appreciate what is being offered. Without a unifying theme and all of the necessary ingredients, an ADS project may not deliver the intended effect. Even with everything in place, the perception of "smaller" must be actively addressed so that the benefits are clear.

Public input opportunities were highly recommended for their ability to solicit feedback, build trust and even stimulate market interest, despite the inconvenience felt by some individuals. It is noteworthy that NIMBYism was not a major issue for any of the projects studied, which can be attributed in part to developers anticipating concerns and addressing them in a pro-active, consultative way. Public input opportunities can both acquaint the public with what is proposed, which can dispel some fear and scepticism (NIMBYism), and provide the developer and the municipality with information from the community about what the market needs.

Finally, a couple of interviewees mentioned the role of housing trends, such as the new urbanist movement. The notion of good timing, however, can be expanded beyond this overt one. For example, in a municipality experiencing recent groundwater quality issues or beach closures, the benefit of narrowing pavement width on pollutant loads may be easier to grasp. An affordability platform can be very attractive in the wake of recent concern about high housing costs. Environmentalists can be supportive of ADS as less land-consumptive, and their endorsement can be invaluable. The ability to "catch the wave" requires perspective and an ability to frame ideas in a way that people can relate to. It can speak to not only market interest, but by clarifying the intent of ADS, entice support of decision-makers, and speed up the turnaround time for project review and approval. As one municipal official said of his situation, the ADS were considered because they solved a problem, it was not a matter of just doing it for the sake of it.

In retrospect, these four critical conditions may seem obvious, however, even the successful entrepreneurs we spoke to did not identify them as such but rather had an innate sense of how to assemble strong ADS proposals. For example, knowing explicitly where one is headed should help prospective entrepreneurs to take more systematic and effective steps. Knowing that there are prerequisites can help evaluate the chances of an ADS proposal, which could affect the decision to proceed, and perhaps avert unsuccessful initiatives which deplete not only the developer's and municipality's resources but reinforce the attitude that innovation is just not worth it. A developer who is strong in three of the four areas might overlook the need for the fourth, and could benefit immensely from addressing it. Knowledge of these necessary conditions could also help to identify the weaknesses of a project proposal and focus resources where they are needed most.

It is instructive to note too that these critical conditions really are ideals to be sought after, and are separate from the actions that can be taken to create them. Specific actions or strategies call for ingenuity and judgement and are situation-specific, whereas the conditions they seek to create are decided. Separating the targets from the steps that can be taken to attain them should make the process of innovation more straightforward.

These keys to successful ADS projects focus on goals and actions that *developers* can take to support ADS proposals. This is because the research is based primarily on developer-initiated projects. Certainly governments as well as housing or public interest groups can also promote ADS in order to support more community-oriented, lower-maintenance and environmentally-friendly forms of development. Roles for the non-developer are covered in more detail in the following pages.

4.2 Pre-existing conditions that facilitate alternative standards

As discussed above, four "critical" conditions characterize projects that successfully changed development standards. These are usually not pre-existing but rather are cultivated by proponents. Two additional conditions were identified that appear to have to be pre-existing in order for ADS proposals to succeed.

The two conditions that must preceed ADS proposals in order to have a realistic chance of success are: (1) the developer has to be trusted by the municipality, and (2) there has to be some demand for innovative housing or community design.

The observation that the municipality must trust the developer's abilities and intentions was mentioned by several interviewees. In fact, several indicated that their particular ADS project was granted largely on the reputation of the developer. This is not to say that developers need to have a reputation for being innovative, but for being reliable (i.e., "no surprises"), fixing problems on previously built sites without delay or argument, and generally having a good working relationship with municipal staff. Also, developers benefitted from being part of the community and "in it for the long haul."

A developer with an unsavoury reputation would probably not succeed with an ADS proposal because he would inevitably be accused of trying to cut corners, however, a developer with a

neutral reputation can certainly improve the prospects for getting approval for an ADS proposal by hiring a highly reputable consultant. This was considered by more than one interviewee to be important to raising the municipality's confidence in a project, though, as mentioned before, sometimes this can do more harm than good if a proponent is seen as trying to import solutions from a foreign place.

Circumstantial evidence, rather than interviewees' comments, suggested that development pressure is needed for ADS projects to be built. In searching for projects that had succeeded in altering standards, it became apparent that a need for alternative forms of housing is a pre-requisite for ADS. Projects that had succeeded in implementing ADS were found only in the "growing" provinces of Ontario, Alberta and British Columbia, while other provinces are not represented. In an attempt to get participation from each major Canadian region, we spoke to developers and municipal representatives from the under-represented regions. Developers in the provinces not studied expressed interest in ADS, and some were frustrated by the lack of interest exhibited by the housing market and policy makers. It therefore appears that a certain amount of development pressure (growth, competition, land shortages, high housing costs) is needed before sufficient momentum exists for ADS to become a reality. This conclusion was confirmed as we posed this question outright towards the end of our search for projects.

The four other critical conditions found to accompany successful ADS initiatives, though, are usually not pre-existing but rather are cultivated by developers as part of ADS proposals. Certainly the prior existence of these conditions would pre-dispose an ADS project to succeed. Indeed, in three of the projects studied, the municipality had wanted something different from the usual development product, in which case the partial "municipal receptivity" undoubtedly facilitated approval.

A useful way of looking at these four critical conditions is to consider that if any of them already exist, the opportunity for ADS might be ripe. Therefore, situations that might facilitate ADS initiatives include:

- a site with few neighbours, which minimizes opposition
- an ADS site that offers needed school or public facilities, which can conciliate sceptical neighbours
- a municipal official with an interest in the project or in ADS, preferably high ranking
- a site with low carrying costs, that therefore can withstand a protracted review period
- a site with unusual dimensions where conventional standards are hard to apply, because a) an extended review period may be inevitable, and b) ADS are likely to be superior to conventional standards
- an infill project that uses ADS to approximate older, established neighbourhood form
- a segment of the home-buying market wants or needs alternative housing, whether for aesthetic, economic or other reasons
- a project purports to implement current municipal policies, for example, housing affordability, environmental protection, pedestrian or transit supportive, etc.

It is noteworthy that some of these pre-existing conditions usually are regarded as roadblocks to development, but are actually assets if ADS are a consideration. For example, an irregular site can

be time-consuming and expensive to subdivide and service, but can be very accommodating for ADS; an infill project with vociferous neighbours is perhaps ideal for requesting reduced setbacks; an environmentally constrained site can actually get vocal community support for being innovative.

4.3 Perspectives of proponents and regulatory authorities

We found that the perspectives of both proponents and regulatory authorities were generally consistent on both the intent behind the ADS and what led to approval. It is acknowledged that this observation might be the result rather than the cause of the negotiation having gone well, each party having *eventually* adopted a common vocabulary, whereas perspectives may have differed at the outset that did cause delays. The consistency of views is nevertheless an encouraging sign in that there seems to be, if not at the start at least by the end of the process, a good mutual understanding between proponent and approval authority. Views did differ on the question of advice to be offered (a highly individual matter anyway).

Having said this, however, in one project the views of the developer and the municipal representative were strongly contrasted. In that case, the developer saw as key the need to anticipate and avoid negative reaction from the public, while the municipality felt the important thing was to have a clear purpose, a strong rationale, and an uncluttered planning process. These views are opposite: one based on addressing weaknesses, the other on working with strengths. Both are perhaps equally valid, and together probably constitute a highly effective program.

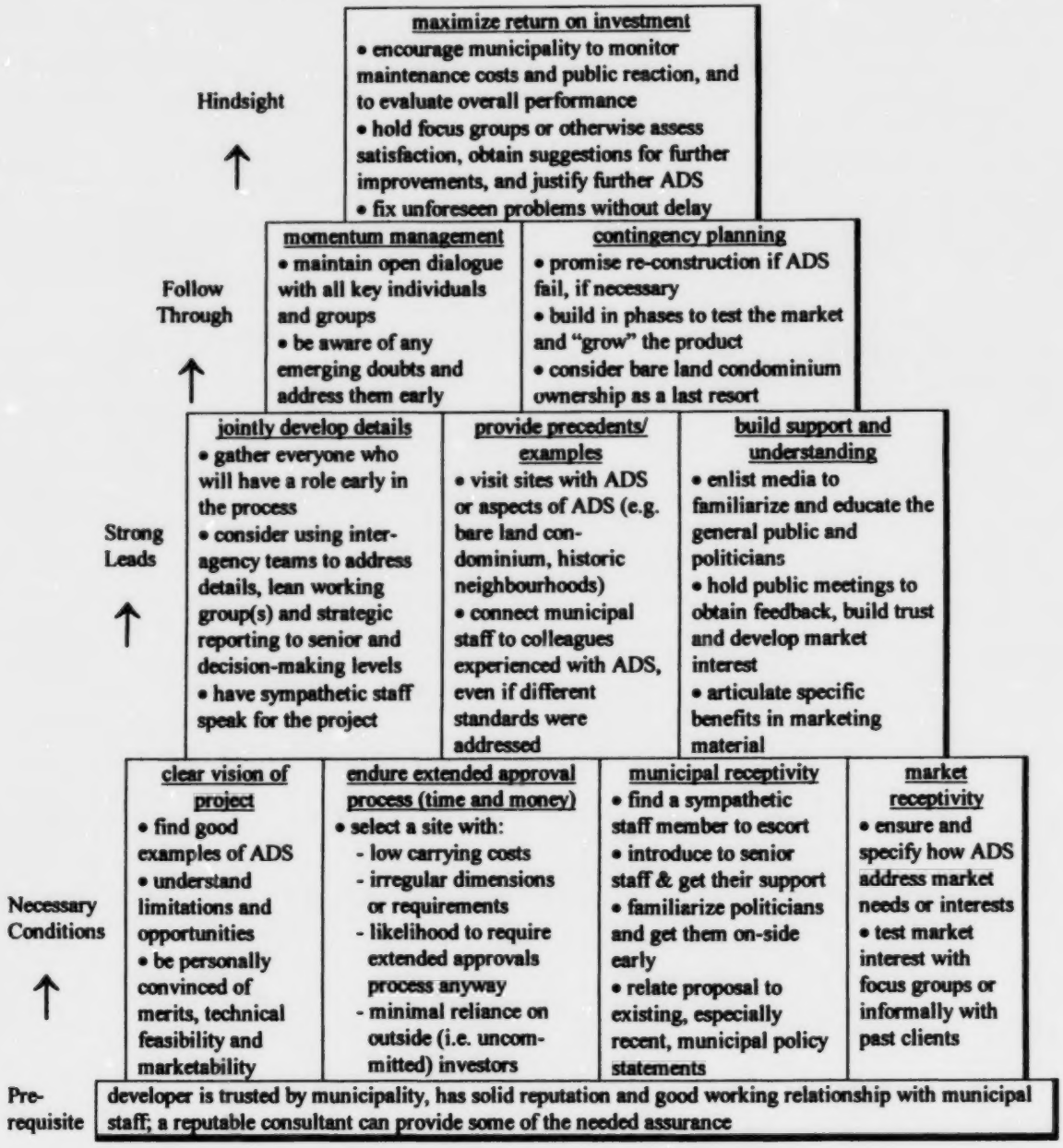
4.4 A model ADS approach?

No single ideal approach would be appropriate for every ADS undertaking. What works in one context may not be appropriate in another because of local factors, as others have also noted (Perks and Van Vliet, 1993). Nevertheless, in general terms, being personally convinced of the workability of the proposed ADS and doing plenty of homework is an essential first step on the part of the developer. Being prepared to spend the time and effort to acquaint the municipality and the public with the proposal by working through the details jointly, is the other hallmark of a successful approach.

When asked, no developer or municipal representative interviewed felt that the approach taken could have been significantly improved. The absence of wrong turns or lost leaders is a positive observation that might be encouraging to others. Most likely, in the projects studied, every turn was a learning experience that contributed to improved understanding and ultimately agreement.

Though no single procedure can be recommended for all ADS proposals, the collective advice of all pundits can be summarized and presented as a framework for how a developer might ideally approach an ADS project (Fig. 3).

Fig. 3. Building a Successful Alternative Development Standards Project


Hindsight
maximize return on investment
• encourage municipality to monitor maintenance costs and public reaction, and to evaluate overall performance
• hold focus groups or otherwise assess satisfaction, obtain suggestions for further improvements, and justify further ADS
• fix unforeseen problems without delay
Follow Through
momentum management
• maintain open dialogue with all key individuals and groups
• be aware of any emerging doubts and address them early
contingency planning
• promise re-construction if ADS fail, if necessary
• build in phases to test the market and "grow" the product
• consider bare land condominium ownership as a last resort
Strong Leads
jointly develop details
• gather everyone who will have a role early in the process
• consider using inter-agency teams to address details, lean working group(s) and strategic reporting to senior and decision-making levels
• have sympathetic staff speak for the project
provide precedents/ examples
• visit sites with ADS or aspects of ADS (e.g. bare land con-dominium, historic neighbourhoods)
• connect municipal staff to colleagues experienced with ADS, even if different standards were addressed
build support and understanding
• enlist media to familiarize and educate the general public and politicians
• hold public meetings to obtain feedback, build trust and develop market interest
• articulate specific benefits in marketing material
Necessary Conditions
clear vision of project
• find good examples of ADS
• understand limitations and opportunities
• be personally convinced of merits, technical feasibility and marketability
endure extended approval process (time and money)
• select a site with:
- low carrying costs
- irregular dimensions or requirements
- likelihood to require extended approvals process anyway
- minimal reliance on outside (i.e. uncom-mitted) investors
municipal receptivity
• find a sympathetic staff member to escort
• introduce to senior staff & get their support
• familiarize politicians and get them on-side early
• relate proposal to existing, especially recent, municipal policy statements
market receptivity
• ensure and specify how ADS address market needs or interests
• test market interest with focus groups or informally with past clients
Pre-requisite
developer is trusted by municipality, has solid reputation and good working relationship with municipal staff; a reputable consultant can provide some of the needed assurance

Part 2. Regional-Level ADS

4.5 Challenges and solutions for providing alternative regional scale standards

There is much current interest in off-site standards, which is why this study took the opportunity to probe individuals experienced with innovative land use for any recommendations or ideas on this subject. The cost, magnitude and sophistication of off-site services, the multiple agencies, time frames and objectives, and inherent assumptions and risk management issues involved explain why there is little progress and much perplexity about how to go about changing these standards. Expecting philosophical answers on this difficult subject, questions for Part 2 were structured to be less open-ended than those of Part 1. Despite this effort, few detailed suggestions were obtained on how specific standards should be changed or how to proceed. However, a much clearer picture emerged of where some of the key difficulties for off-site standards lie, and a sense of how to address them. These fall into three categories.

• Adherence to Gold-Plated Standards

Land consumption and over-design were felt to be the biggest problems for all of the off-site standards considered in need of revision, including collector/arterial/regional roads which topped the list, stormwater infrastructure, schools and parks (which were usually combined), and provision of public facilities (e.g., firehalls, community centres, libraries).

Many developers were annoyed that the same "Cadillac" or "gold-plated" standards are applied across the board instead of services being designed to meet needs in a site-appropriate, fiscally responsible manner. As one developer explained, for example, a cul-de-sac at the top of the drainage system is required to have manholes of the same diameter and material as those downstream. One developer felt that it is easier for municipalities to deal with many little structures (e.g. each subdivision with its own stormwater management pond), rather than take a more assertive, "big picture" approach that could scale down the need for major conveyance and treatment systems. (Another suggested that this approach is likewise easier for developers.) Another asserted that municipalities are fearful of the liability an assertive approach might incur, since, as some have noted (e.g. Slack, 1996) major infrastructure projects with large capital outlays and long time horizons can involve higher risks.

Interviewees suggested a number of factors contributing to the strong adherence to established standards.

One reason is that in many cases one department or agency designs the facilities, while another is responsible for their operation and maintenance. This was mentioned for both roads and stormwater services. Lack of coordination between plan checkers and site inspectors is another example of how separation of responsibility can deter innovation (Habitat and Archemy, 1998). This situation can perpetuate the application of standards in excess of need, and aggravate attempts to introduce new standards.

Multiple layers of bureaucracy can create redundancies and confusion. For example, it can be difficult to know precisely what criteria are relevant when it comes to providing land for schools and parks (e.g., Severtson, 1998). While certainty about what is expected is obviously desirable, a "prescriptive based" approach is not. For example, one municipality reported that official park standards are routinely *not* met; instead *design* of the particular park generally is more important than its size. This "performance based," site-specific approach would probably be welcomed in other jurisdictions. It was pointed out that in general standards are high and non-negotiable to protect municipalities from unscrupulous developers who might otherwise take advantage of such flexibility.

Usually, the choice between "Cadillac" and adequate levels of service is made by municipal staff at a technical level. While city councils ultimately have the final say, rarely are councils or the public aware that there may be alternatives to the standards selected by staff. Furthermore, Cadillac standards are thought to preferred by some municipal employees because they can be regarded as maximizing property tax revenues (Perks and Van Vliet, 1993).

Moreover, much or all of the capital cost of these services does not come from general municipal revenues but from infrastructure reserves collected from developers. The ready availability of this cash and its independence from general municipal budgets means that they tend to be less thoroughly scrutinized by politicians and the public. This contributes to a situation where there is little incentive to economize.

Misunderstandings regarding who pays for expensive infrastructure and what the real cost is, also perpetuate an adherence to Cadillac standards. With respect to capital costs, the public thinks the developer pays, not recognizing that these costs are passed on to homebuyers. Politicians in general do not link the cost of off-site services to housing affordability, nor to ongoing maintenance and operations costs ultimately charged to property taxes. Blais (1996) estimated operations and maintenance costs to vary directly with capital costs. Essiambre et. al. (1995) calculated capital costs to be only one quarter of the total (75-year) lifecycle costs, while maintenance and operations costs consume 65 to 68%. These observations suggest that some municipalities are not aware of the impact of selected standards on future operations and maintenance expenditures. Clarity on who really pays for expensive infrastructure and full costs would facilitate more rigorous examination of whether the standards selected are really needed.

One developer told us that despite explicitly itemizing how the municipality could save money with alternative watermain connections, the message just did not sink in. The same individual felt that the strength of his particular ADS project was also its weakness, that it sold on its "soft," aesthetic merits, rather than its technical and economic benefits. Perhaps part of the reason that alternative off-site standards face such a challenge is that, just like the watermain connection, the benefits are hidden. Their impact does not offer immediate "curb appeal."

Two municipal employees stated that off-site standards are not issues for municipalities, that there are no monetary or other benefits to be gained from reconsidering these standards. One stated that it is unsafe to reduce level of service at all. This perspective is reminiscent of the early days of on-site ADS initiatives, where "alternative" development standards were often equated with "reduced" standards that presumably provided lesser, inadequate levels of service. The fact that

municipalities do not pay much of the installation costs of new infrastructure exacerbates these problems.

Elsewhere, other barriers have also been identified that contribute to the adherence to gold-plated standards. Field (1992) identified lack of funds, lack of trained personnel, lack of the competitive driving force [that is] present in the private sector, lack of sponsors willing to take risks, and lack of proven examples and models as discouraging the use of the latest infrastructure technology.

- Insufficient Information and Communication

Several interviewees felt that better information and communication is needed, particularly on the status of ADS projects elsewhere. Besides the need to improve information exchange among different jurisdictions, better communication is also needed at the local level both among the different municipal departments and with public boards and other stakeholder organizations.

For all standards considered to need updating (both on-site and off-site), having precedents was seen as very helpful, particularly with easing municipal reticence. One municipal representative explained that where (even unrelated) standards were addressed elsewhere, it is a comfort to know that you are not the first to deviate from accepted practice. Gates and Ramsay's study (1995) on information needs also concluded that contact with other municipal colleagues was a very important information source for municipal infrastructure professionals. The Ontario Ministry of Municipal Affairs and Housing's "Breaking Ground. An Illustration of Alternative Development Standards in Ontario's New Communities" (OMMAH, 1997) was intended specifically to profile examples of built ADS.

No doubt there are innovative ways to provide off-site services either already in practice or under consideration, that are little known outside of their place of origin. The Region of Ottawa-Carleton wants to measure the generation of stormwater runoff from individual properties as a way of more fairly collecting revenue for the use of stormwater management services (Schepers and Davies, 1999), an initiative with the potential to result in innovative standards. In one of the municipalities we studied, official park standards were reportedly commonly *not* met; instead good design is considered more important than the amount of land dedicated. More information on the decision-making processes and performance of these and other innovative off-site servicing strategies could be very helpful to agencies considering revising their off-site standards.

Another problem is the lack of formal monitoring of completed projects. This information gap destines communities considering ADS to "re-invent the wheel," and perpetuates the fear and uncertainty associated with trying something apparently "new." Better monitoring could facilitate information exchange simply because reports would be available. A host of dilemmas are associated with the issue of monitoring. The literature points to: "immeasurable and intangible impacts that may be overlooked because they have no dollar value, ... [and] an enormous problem in dealing with the timing of impacts, some of which occur immediately while others take many years" (Pushchak and Wilson, 1981). Whereas the costs of building and maintaining ADS can be relatively straightforward to measure, the benefits of ADS are harder to quantify. One developer explained how difficult it is even to agree on the Terms of Reference for a cost-benefit study, not

only because of the difficulties of agreeing to what to measure and how, but also to differing views on the timeframe and area that should be evaluated.

An ADS monitoring study (Ottawa-Carleton, 1998) compared two communities, one built to conventional and the other to alternative standards. It measured development costs, housing affordability and market response, cost and effectiveness of servicing and safety. While this work made some headway into measuring the more elusive customer satisfaction element in addition to basic construction and maintenance costs, unfortunately it measured satisfaction against the conventional standard instead of asking how the ADS might be *better* than the conventional form. Moreover, the scale of the sites compared did not produce the full range of benefits that a more comprehensive alternative community would have yielded. Despite its shortcomings, it is one of very few published evaluations of ADS that have been built, and much more of such monitoring is required.

Who should pay for monitoring? Developers who monitor their own projects cannot be expected to divulge their findings for the general good. Municipalities hardly have to time to consider ADS proposals let alone monitor the results, though this would be logical. Those that do monitor are rarely in a position to broadcast the results, which leads to another dilemma: Who should be responsible for the *dissemination* of results that are collected?

Finally, *how* should the results of project monitoring be transferred? A lot of relevant information already exists, but is not as widely known as it should be. Part of the difficulty here is that information needs to be synthesized into concise and useful packages. Earlier work stated that "a systematic, thorough, and concise presentation to senior staff in the various 'stakeholder' organizations in necessary to effect changes in standards" (Marshall Macklin Monahan, 1992). This turns out to be a fairly tall order where off-site standards are concerned, since it is extremely difficult to be systematic and thorough yet concise on matters that cover large areas, are complex to design, and involve judgements on acceptable assumptions, tolerances and risks. Even if concrete information could be developed and delivered to the doorsteps of decision makers, there are still problems having it assimilated by people who, for the most part, have little if any time for continuing education and professional development.

An effective information strategy might be to develop documents that simply present the available options, rather than evaluate and select "best practices." For example, CMHC and the Ontario Ministry of Housing have previously published fact finding surveys (e.g., Neilson-Welch, 1992; Pianosi, 1993; OMH 1979). These have many advantages including simplifying the task, presenting the highest number of options, identifying new initiatives, increasing awareness among industry players and encouraging contact and communication.

Part of the problem of information exchange is the loosely knit nature of the development industry, although none of the interviewees identified this problem as such. Nordicity (1997) concluded that unlike other business sectors where the market "pulls" innovation, in construction innovative change comes slowly because new technology is devised by suppliers and marketed to builders and contractors. This means that information concerning innovation is not easily transferred outside of the mandatory building code and/or the sales pitches of suppliers who have something to sell. In contrast to the building industry, in the land development industry there is no

good national information vehicle (e.g. a newsletter with a reach akin to that of the Canadian Home Builders' Association), nor are there centralized, uniformly adopted "best practices" (OHBA, 1997) akin to a "building code" (though the Institute for Research in Construction (IRC) recently reported working on a National Technical Guide for Municipal Infrastructure, (NRC, 1999)). Moreover, there is very little "technology push" as there are few "products" to sell. Where there have been opportunities to sell new products that rationalize standards, such as in sewer and water piping, interviewees reported that these standards are not issues, as they have already been updated.

Four characteristics of the construction industry are considered responsible for making the introduction of innovations particularly difficult (Nordicity, 1997). These are:

- numerous small firms characteristic of the industry generally lack the financial surpluses to invest in R&D,
- being based on traditional processes and regulated trade skills, there is limited exposure to new technology and lack of resources for training,
- the long life-cycle of construction products, along with the perceived risks inherent in introducing new innovations means the risk/reward ratio is perceived to be short, which inhibits change, and
- the industry is widely dispersed — there is no centre of information or expertise.

Although strictly speaking these observations pertain to building materials and techniques rather than land use standards, the structure and character of the building industry in terms of firm size and segmentation are equally true of the development industry, and severely limit change the pace of change in residential development. Many of these difficulties could be improved with better information and communication.

Poor availability of information exacerbates the struggle faced by development companies, but in addition, developers may not actively update their knowledge even about readily available and widely promoted programs and projects. Shivji (1998), who surveyed developers, home builders and consultants in Calgary, found that even though many claimed to implement some innovative practices, references to specific projects and developments were disappointingly limited and vague. He observed that "professed awareness was limited (extremely) to the (few) Duany and other U.S.-based Neo-Traditional projects." His data shows that (in Calgary) land development and house building industries typically undertake less research and development than is customarily expected in other sectors. On average, 25% of land developers declared having a designated budget category and activity for research and development, and of those who actually did dedicate funds for R&D, none spent more than 3% of their annual gross expenditures (operating and capital budgets).

Shivji (1998) concluded that innovation is driven primarily by increased competition for consumer satisfaction and improved affordability. While consumer's high expectations and demands may be a key driver for the introduction of innovations, they have also been blamed for the general persistence of "Cadillac" standards. This latter claim, according to Perks and Van Vliet, (1993), is questionable and has not been tested.

Some of our interviewees certainly did identify the conservative nature and preferences of the consumer as a major constraint for introducing innovative design initiatives. One developer

reported that his market is comprised of many immigrants, who expect spaciousness, i.e., big houses on big lots. A municipal representative explained that despite complaints about garage dominance in new subdivisions, when given the option, what buyers buy is the biggest house on the biggest lot for the least cost, which turns out to be that very same garage dominated house. The notion that "smaller must be actively countered" was raised, as was advice to be specific about benefits. Emphasizing how ADS communities can better accommodate traditional values probably accounts for much of the appeal of neo-traditional planning.

The literature suggests that lack of information at the consumer level may lie at the root of the problem. Future homebuyers are the most poorly represented in the planning process (CMHC, 1995). Furthermore, they generally come in contact with builders, not developers who determine the overall form and layout of the community and composition of housing types. This dissociation between home buyer and developer is one of the important inhibitors to innovation (Shivji, 1998). Others have also recommended that the public needs to be better informed about the benefit of innovations in order to accelerate their adoption (Booth and Kettenbeil, 1994; Perks and Van Vliet, 1994; CMHC, 1995).

Difficulties coordinating offices within a municipality are also substantial. Interviewees recommended that schools and parks should share facilities, and likewise that certain stormwater management functions should be permitted on parkland. These ideas have been around for some time; for instance, Marshall Macklin Monahan (1992) recommended several ways that privately and publicly owned community facilities could save on land and construction and maintenance costs by sharing parking, open space and buildings. Likewise, CMHC (1995) reported on eighteen case studies of joint use facilities built since the 1970's. That these ideas are still being suggested reveals *both* a serious lack of communication *among* jurisdictions as well as a lack of communication between developers, municipal departments and adjunct agencies such as school boards and conservation authorities *within* individual jurisdictions.

Several interviewees complained about different municipal departments being "out of sync." Typically, the planning department is regarded as moving in a direction foreign to the engineering department. Even the legal department was identified in one instance as holding up a project. The need for a shared vision and more coordination and integration within municipal government has been noted before, as have the particulars: working towards improved communication to decrease duplication, work smarter, build partnerships and streamline activities (FBMP, 1994). Compounding this predicament can be challenges of synchronizing the provision of school and other infrastructure services involving agencies outside of the municipality, such as conservation authorities, regional governments and adjacent municipalities.

Pomeroy (1997), who hosted focus groups to assess professional attitudes towards ADS, observed that many participants felt they had very few opportunities to dialog on these issues both with other disciplines and other jurisdictions, and that more group interaction would assist in increasing mutual understanding and developing practical alternatives. He concluded that any organization could readily initiate such dialog.

One developer explained how a lack of information and coordination leads to maximum land consumption. City planners, who are most likely to be in support of ADS, are regarded by

municipal councils as having a theoretical perspective that can be unrealistic. Developers are regarded has being profit-motivated, so they cannot be trusted. Hence, the inclination of city councillors to take all the land to which they are entitled, which they consider to be the most prudent choice. This is despite the fact that standards relating to land dedications have a significant impact on per unit costs (Pomeroy 1997).

Many of the problems resulting from poor information exchange at the municipal level could be solved by strong leadership and an overriding vision or sense of direction, both of which were considered to be rare but imperative.

- Lack of Leadership/Direction

Strong leadership was frequently mentioned as key to the evolution of alternative off-site standards. Although it is difficult to act on such a recommendation, suggestions were made on what could reasonably be expected from each agency involved in the development process.

Unlike site level standards where it can be feasible for a developer to lead an alternative standards project, for off-site standards the complexity and magnitude of issues at stake requires government leadership. Pressman and Zepic (1986) also felt that governments should take responsibility to develop, finance and produce projects demonstrating new technological, design and planning principles. This message appears to have been acted on, given the A-C-T, R2000 and Advanced Houses programs. Yet, perhaps what may be missing is a hearty public education element, for although prototypes have been built, the practical benefits to home owners and home buyers remain somewhat obscure.

Concerning who should initiate changes to off-site standards, there were differences of opinion. While some felt that developers need to assume leadership, most felt that municipalities and higher-order levels of government and their agencies (e.g., CMHC) should lead, with all regulatory agencies and the public involved. (Overall, developers felt they were not in a position to assume leadership for revising off-site standards. We suspect that the developers who suggested that they are, are frustrated with the lack of leadership exhibited by others, while a municipal representative who made the suggestion felt that the development industry should gauge and report on what is needed out in the real world.) The majority of responses tended to the view that the municipality should take the leadership role. Certainly most felt that only governments have the capability to orchestrate changes to off-site standards.

It is not a straightforward matter for municipalities to assume a leadership role, for many of the reasons outlined above. When the City of Calgary undertook their Sustainable Suburbs Study, they were criticized on several fronts. For example, although they attempted to obtain participation through a Round Table process, they were nevertheless accused of ignoring "the market" and consumer preferences, failing to obtain input from *experienced* practitioners, and even manipulating the process to a pre-determined outcome (Shivji, 1998).

Field (1992) pointed out that municipalities lack the features that typically drive the innovation process, including market demand for a product, rivalry with a competing product or process, potential gain or reward, and fear of being displaced from a market. It is interesting that

competition between municipalities and fear of being displaced from the market were, in fact, driving forces behind some innovation on the ADS front. For example, Markham City Council in an effort to offer a distinctive housing product was a key driver of the new urbanist Cornell development, and in the City of Fort Saskatchewan, a review of the land use by-law that resulted in the creation of new minimum lot sizes was initiated by the City Council who wanted to capture a greater portion of the region's new homebuyers (EPI, 1995).

The notion of partnership between municipality and developers was mentioned, and some would add the public to the mix. Leaders of the calibre of David Crombie or Jane Jacobs were mentioned. Even a mayor or commissioner was felt to have the power to unify the different municipal departments into moving in one direction. Again, however, this recommendation is difficult to act upon, as leadership still has to come from somewhere.

The impact of leadership and vision is apparent in the "Making Choices" initiative of the Ontario Ministry of Municipal Affairs and Housing (1995). This initiative had a considerable influence nationally. Nevertheless, some interviewees were disappointed that its policy direction was not sustained in practice. One developer felt that the problem is not a function of political parties taking turns in power, but that when it comes right down to it, the "Making Choices" type of initiative is superficial, that the province is ultimately ambivalent on supporting affordability. He added that "real commitment" needs more than policy statements; commitment needs to be backed up by money, programs or procedural changes.

Many felt that higher order levels of government may need to provide the leadership necessary in order to encourage, enable or require municipalities to effectively address standards. They alone can overview the experiences of many municipalities, and offer an unbiased and comparative assessment of different standards. Similarly, because they alone have the mandate to serve many jurisdictions, they may need to facilitate communication among them. Despite longstanding recommendations to this effect (e.g., CMHC, 1995), unsatisfactory progress has been made. As others have suggested (e.g., Gates and Ramsay, 1995), it is probably time to consider vehicles such as a centralized information source like a website, particularly one with interactive capability enabling both easy updating and on-line dialog between practitioners. Educating the general public on the costs and benefits of alternative forms of development, and perhaps re-defining "affordability" from simply up-front costs to full costs, may require the perspective and impartiality of a national government agency.

Overall, it was felt that a philosophy or vision of where we are headed is critical. This was regarded as having a great deal of potential to put an end to the sprawl of the urban landscape and associated costs, as well as having significant potential to clean up the cluttered planning process. Others have come to a similar conclusion, for example, D'Amour et. al., (1996) concluded that strategic community plans, developed in a participatory way and in a regional context, should preceed and guide physical planning.

4.6 Information needs

Interviewees were divided on the question of what data needs to be gathered or questions answered, and tended to have strong feelings about it.

On the one hand, some were adamant that no new information is required, that all the information needed to justify alternative off-site standards is already available. They asserted that we already know that the full costs of laying infrastructure with current standards creates a sprawling urban form which is more costly overall than a more space-efficient alternative, and that research studies indeed validate this, e.g., Blais (1996) and Essiambre et. al. (1995). The available information is compelling, for example that approximately 70 percent of per unit life-cycle costs savings are public savings (Essiambre et. al., 1995), and suggests that many municipalities are not aware of the connection between standards selected and long term operations and maintenance costs. CMHC (1995) also observed that a great deal of information exists but could be better targetted.

These interviewees were quite frustrated with the performance of provincial governments in particular, who were accused of being ambivalent on their support of housing affordability. Some blamed short political terms of office for much of the problem, as have others (e.g., FBMP, 1994). It was asserted that no amount of information can have any impact on governments with short-term fiscal objectives. It was suggested that it might be possible to sell ADS proposals based on economics alone, assuming one could get the message out effectively. Ultimately the issues above, in particular the need for leadership and an overall philosophy about where cities are going, were considered more important than specific information needs.

Others felt an imminent need for information, especially on examples of initiatives in other jurisdictions and actual performance of built ADS in the field. The views of those who felt that more information is needed are outlined in detail above. It is worth noting here, however, the irony of the need for real cost/benefit data, while, where opportunities exist to measure net costs and benefits (i.e., the on-site ADS), few are rarely thoroughly monitored. One might expect that much could be learned about how to conduct cost/benefit analyses by starting at the individual development scale, and that both at the on-site and off-site levels, progress could be hastened by beginning to articulate and measure financial and other implications of the available alternatives.

Despite the divergence of opinion on information needs, one thing is certain. There is undoubtedly a lack of easily accessible, succinct and relevant information on the full costs of alternative off-site standards.

4.7 Improving the infrastructure planning process

In terms of improving the process of providing off-site infrastructure, interviewees did not make suggestions specific enough to envision a different or improved planning process. There were many calls for better communication, as well as consolidation of the review process which is lengthy and weighted down by multiple, sometimes redundant, bureaucracy.

The problems of inefficient communication have already been discussed. Indeed, clearer communications and consolidated expectations at the outset could, by itself, shorten the review period.

The merit of a unifying vision or philosophy was suggested again in the context of improving the process. One municipal officer reported "real dog fights" among developers about the distribution of costs for off-site standards, because it can be difficult to pin down precisely which communities

generate the demand for services. The frequent lack of correspondence between the geographic area served by specific infrastructure facilities and the size of new subdivisions can create a morass of complexity and disputes as to how costs should be allocated amongst users (Wright, 1993). Developers could expedite the re-evaluation of off-site standards if they spent less effort disputing the distribution of costs and more on working together to examine how the standards themselves might be revised.

Some of the projects investigated did adopt a "philosophical" approach. For instance, the larger projects attributed much of their success to comprehensive vision. Projects which were most successful (in terms of the level of satisfaction of the proponent and approval agency, and which led to municipality-wide reviews of standards) began with a "first principles" approach; that is, they took a "what are we trying to achieve here" approach rather than "let's introduce back lanes." A city planner considered as key the working group "stepping back" to consider the project's goals and how ADS can be used to implement them considering the intent behind the original standards, (i.e., "what is the purpose of the side yard anyway?") The importance of "intent" is reflected in updates of the Canadian Building Code, which is becoming more objective-based (NRC, 1999).

One municipal planner attributed a project's success to a lean versus a bogged-down working group. In one municipality, the developer paid for, while the local government hired and oversaw, a consultant who coordinated the ADS project application. This consultant then went to outside agencies as needed to negotiate terms of specific standards, and did so in a powerful position given that it had both local government and developer support. This independent, 3rd party arrangement also removed the potential for conflict between developer and municipality who both confronted the consultant, not each other. Elements of this approach may be useful in addressing the difficult issues associated with off-site standards.

Improving the infrastructure planning process might require a heavy hand from higher levels of government. The "Making Choices" initiative of the Ontario Ministry of Municipal Affairs and Housing (1995) was a step in the right direction, but was not sustained in policy, legislation or dollars. Provincial legislation may also restrict a municipality's ability to be flexible with servicing, and may need review.

CMHC (1991) addressed "affecting change" in development standards in a study on the relationship between sustainable development and housing and community planning. It was concluded that incorporating sustainable urban development principles should be the number one priority in the planning process. This would require the involvement of more than the usual stakeholders and a more ecological (as opposed to exclusively technical and economical) ideology. The challenge, they said, is to evolve a planning process that is not the captive of special interests, that functions as much as possible on collegial rather than hierarchical lines, and that provides an avenue for the vital involvement of would-be beneficiaries. We suspect that most of our interviewees would agree.

Overall, it seems that a more "top-down" approach is favoured over a "bottom-up" one, based on the strong call for leadership, benefits of comprehensive plans, a detached perspective with 3rd

party involvement, and approaching senior levels early in the project. This obviously necessitates a welcome and free flow of information from the bottom up.

4.8 Clues from built ADS projects about how to address off-site standards

One might ask whether the experiences of changing on-site standards can offer some ideas or suggestions on how to tackle off-site standards.

The critical conditions cultivated by proponents in successful ADS initiatives:

- clarity of vision/purpose
- municipal receptivity (especially engineering/works department)
- ability to weather out extended approvals process
- market receptivity

could be converted from a single residential project situation to a municipality-wide scenario, for example:

- clarity/articulation of desired direction/goals
- municipality desires change, and exhibits a unified disposition
- capacity/resources available to adequately develop goals, performance guidelines, standards
- consumer and political support.

The flip side of these "ideal conditions" point to the *barriers* commonly felt on the subject of alternative off-site standards, which are:

- confusion and misunderstanding about purpose/rationale/direction of ADS
- lack of strong municipal leadership, departments may be uncoordinated or reluctant
- inadequate time/resources to devote to long-range solutions
- market and political scepticism of alternatives to conventional standards.

To facilitate changes to off-site standards, then, several strategies can be proposed based on what found to be effective at the on-site ADS level combined with input from interviewees concerning off-site standards. Fig. 4 suggests how municipalities and higher order levels of government (the primary actors) could initiate and coordinate changes to off-site standards.

Developers are not in a particularly strong position to promote the re-consideration of off-site standards, nevertheless, there are actions they could take. Particularly through development associations, they could suggest specifically how individual standards might be revised, help to educate the public by presenting alternatives to the usual standards, and sponsor, co-sponsor or participate in studies in which municipalities take an overseeing role.

Municipalities must lead the re-consideration of off-site standards. The complexity of these standards requires municipal coordination, the physical scale of off-site standards approximates that which municipalities govern, and municipalities speak for the public interest. Clearly, municipalities have been increasingly shouldering the burden of public service, and continuing

Fig. 4. Overcoming Barriers to Alternative Off-site Standards

Barriers to Alternative Off-site Standards	Strategies to Overcome Barriers to Alternative *Off-site* Standards (primarily actions for governments)
confusion and misunderstanding about purpose/ rationale/ direction for change	improve information on alternative off-site standards (e.g., identify examples of municipalities using or considering, locate evaluations of performance of ADS)
	compile and summarize concise information and deliver it to target audiences (e.g., engineering departments, city councillors, school boards, home buyers)
	develop information exchange/dialog vehicles (e.g., conferences/talks, publications in trade journals, bulletins, website with interactive forum)
municipal reluctance to change, especially engineering/ works department	obtain/develop cost/benefit information on alternative off-site standards, including short- and long-term scenarios (i.e., especially construction, operations and maintenance, and replacement implications)
	appoint/empower/encourage a municipal employee, politician or committee to introduce, study and escort the concept
	better promote programs that reward bonafide efforts to rationalize standards, i.e., Canada's Green Infrastructure Program, Climate Change Action Fund
inadequate time/ resources to devote to long-range solutions	get more mileage out of existing government programs, demonstration projects and research studies
	provide opportunities, incentives or require that municipal staff participate in sessions that discuss alternative standards (i.e., professional development)
market and political scepticism of alternatives to conventional standards	direct municipal boards/appeal agencies to fasttrack appeals on projects where efficient standards are proposed (Marshall Macklin Monaghan, 1992)
	sponsor public dialog/information exchange events and vehicles
	allow alternative infrastructure to be built to give the public a role in deciding what is acceptable service (e.g., temporary inundation of playing fields)

government re-organization, fiscal restraint and urban housing research all point to even further increases in the municipal role. This may well turn out to be a fortunate situation, if the need to rationalize spending can be used as a tool to develop more cost-effective infrastructure and support good planning principles such as densification and affordable housing.

The need for information, and especially its dissemination and interchange, has to be confronted by higher-order levels of government. The federal government should collect information, distill its most salient facts, and effectively deliver it to technocrats, politicians and the public. Not only that, but in these times of information overload and the challenges of keeping information up to date, it should facilitate communications among users. A national, central registry of successful examples of ADS projects, particularly in electronic format (i.e., website with an interactive capability allowing input and discussion) would enable information to be kept current and provide a valuable dialog element. Previous work (e.g., CMHC, 1995; Gates and Ramsay, 1995) has concluded that an internet-based information network is likely to be the best long-term vehicle for the dissemination of topical, current information on municipal issues, including infrastructure.

Recent work prepared for CMHC and the National Research Council to determine what the federal role for sustainable community development should be, recommends that the federal government help institutionalize a Canada-wide Sustainable Communities Network. According to the report (CMHC and NRC, 2000), the lack of a good network both limits the speed of innovation in the planning and design of new communities among specialists (academics, planners, architects, landscape architects, developers, builders, etc.) and impedes acceptance of innovative ideas among the general public. Such a network could satisfy much of the federal government's responsibility towards information and communications support, provided it is well designed, up-to-date, and allows 2-way communication. (The term "sustainability" probably should be carefully considered because of the potential of its being regarded it as antithetical to the interests private enterprise.)

5. Conclusions and Recommendations

The purpose of this study was to learn from the experiences of those who have been successful in implementing ADS, both proponents and approval authorities. We wanted to find: (1) whether key factors can be associated with successful projects, to better understand and facilitate more initiatives in this area, and (2) directions for improving the revision of off-site standards. These inquiries were intended to determine whether, and how, innovative site planning and engineering could be accelerated.

Despite the potential for ADS to provide more efficient, affordable and community-oriented development standards, many regard the challenges as just too formidable. We found, however, that although the pursuit of ADS is not an easy undertaking, many of the obstacles that might be considered insurmountable were actively addressed and overcome by proponents. Specifically, certain critical conditions (i.e., clear rationale, endurance, and receptivity of the municipality and housing market) were cultivated by developers as part of ADS proposals. This research has thus simplified the predicament of pursuing ADS by identifying key elements that tend to accompany successful ADS projects and by offering assorted, proven techniques that have been used to attain them.

Based on these keys, advice from interviewees, and deductions made throughout the course of this research, a number of specific actions can be recommended to advance ADS, both on- or off-site. These are summarized in Fig. 5.

Notwithstanding the roles of the principal participants (namely developers, municipal and higher order levels of government), clearly there is lacking a coordinated effort among all the potential beneficiaries. Ratepayers, environmental and developers' groups, and even municipal business development offices, for example, could become better partners and jointly initiate, or lobby for, concrete action.

In addition to isolating keys to successful ADS initiatives and providing targeted recommendations to accelerate progress, we found that built ADS projects provide persuasive arguments for taking ADS further. In particular:

- Municipal representatives tended to be even more satisfied with the ADS built than were the developers, which should strengthen the case for private sector ADS proponents;
- It is not uncommon for municipalities, having approved ADS for a specific site, to go on to revise their development standards on a city-wide basis; and
- Feelings were expressed on the part of both developers and approval authorities that even further reductions to on-site standards were desirable.

Several miscellaneous observations should be useful for anyone involved in or considering ADS projects. For on-site standards:

- There are no definite turning points or magic bullets to achieving ADS; the only way to hasten the approval process is with thorough advanced preparation;
- Projects successful at altering development standards are not confined to municipalities with explicit goals in this area;

- Projects that succeed in altering development standards appear to occur where NIMBYism is not a factor;
- It is worthwhile identifying ADS projects built in other jurisdictions even if different ADS were introduced because they can help to refine and explain a proposal, and because municipal officials value contact with experienced colleagues and the possibility of obtaining even informal performance assessments;
- "Stepping back" to articulate the intent of the conventional standard can help to justify proposed alternatives.

For off-site standards:

- The public sector is the appropriate leader to address off-site standards issues;
- There is a perception in some quarters that private-sector proponents of off-site standards are interested only in cutting costs, so it is wise to proffer documentation that outlines the economic and other benefits of alternative standards;
- Possibly existing information is adequate, but would have to be re-worked and presented more clearly, and made more universally and easily accessible;
- Reconsideration of standards might require involving politicians in deciding on acceptable levels of service, which would require recognition that alternatives to the levels of service selected by their staff may exist;
- Recognition of the operations, maintenance and replacement (i.e., tax) implications of different levels of service would help to accelerate progress.

Even though there are many actions that could be take to promote more efficient and effective servicing and subdivision practices, there are also real dilemmas and impediments to change. For example:

- How to pay for monitoring studies that assess the performance of ADS;
- How to fairly compare alternative with conventional standards using accounting systems that do not accurately calculate costs or benefits which can be diffuse and long term;
- How to motivate government agencies to take action; and
- The need for strong government leadership versus the need for collegial working relationships.

The single biggest impediment to the evolution of efficient standards, both on- and off-site, was found to be information availability and exchange. This puts the onus on higher-order levels of government to develop more pertinent and concise information and to deliver it more effectively. Only they are in a position to find, distill and deliver essential information. Three areas should be pursued: (1) identification of ADS initiatives nationwide, and possibly evaluation of performance relative to conventional standards, (2) development and delivery of concise information packages tailored to non-professional decision-makers, i.e., the home buying public and municipal politicians, and (3) establishment of a central information depot to support dialog among technocrats. Better dissemination of information derived from existing literature and housing programs might be a good place to begin; CMHC's Research Highlights series steps in the right direction, as do advanced and other housing programs, but the fruits of these initiatives still need to fall into the right hands.

Despite the central role of upper tiers of government in promoting ADS, developers and municipal governments still have to do the groundwork. Developers can effectively initiate ADS

Fig. 5. Advancing Innovative Standards

Keys to ADS	What developers can do	What municipalities can do	What higher order levels of government can do
Clear Objectives/ Rationale for Change	• understand that marketing "the concept" is at least as important as technical merit • specify how/where/when municipalities/home buyers/homeowners will benefit from alternative standards • use precedents, informative pictures and site visits (include condominium projects) to demonstrate how ADS can improve land use • connect municipal staff to, and offer information from, jurisdictions having previously introduced alternative standards • solicit vocal support from non-partisan agencies (e.g., non-profit housing group, home builders' association, environmentalists, community leader) • ask, don't assume • especially for off-site standards, consider partnering with municipality to pay for a 3rd party to coordinate review	• recognize the potential of innovative on-site standards to improve quality of life, housing affordability and housing needs, transit and non-motorized transportation, traffic speed, congestion, pedestrian safety, etc. • assist proponents in identifying and quantifying benefits to municipalities/home buyers/homeowners • ask, don't assume • monitor built ADS, especially specify benefits and the cause of any difficulties • acknowledge the need for municipal governments to lead changes to off-site standards, as primary beneficiary and as the public's representative • understand who pays for the full cost of expensive infrastructure • compare operating, maintenance and replacement (i.e., tax) implications of capital projects of differing levels of service	• acknowledge the need for information and improved communication • accept responsibility as primary, unbiased information source • ensure information services: 1. assemble pertinent data on ADS projects built or underway 2. distill key information, such as full cost implications, market acceptance, performance 3. deliver concise information so that it is easily and universally accessible 4. connect parties in need of information • educate municipalities and developers about how standards relate to housing affordability and quality, transit, water quality, quality of life issues, etc. through - conferences/talks - publications in trade journals, bulletins - website with interactive ability
Municipality Welcomes Change and Innovation	• present concept to municipal managers and politicians early, prior to formal submission • elicit policy support before bringing a proposal forward • relate proposals to current municipal issues and goals; consider not only planning policy statements but also business development, parks, water management, etc. • offer municipal staff contact with counterparts with experience with ADS • be explicit about benefits to municipality, home buyers, taxpayers (make use of available data and research) • find someone within the municipality who	• recognize that there are many ways to provide basic service, be open-minded • apply municipal objectives "on the ground," especially long-range planning, visioning, and business development objectives • adopt more of a partnership role both when in receipt of an ADS proposal or when initiating one • seek shared responsibility for any suspected liability associated with new standards (e.g., through federal government programs, or assurance companies possibly as a condition of subdivision approval) • create policies to encourage innovation, or	• provide technocrats, along with municipal politicians, home buyers and taxpayers, with vital statistics on the implications of different standards, particularly long term benefits • provide opportunities, incentives or require that municipal staff participate in professional development programs, e.g., workshops that discuss rationale and performance of alternative standards • actively link municipalities up with available funding and support and practical results derived from samet • support efforts to institutionalize national infrastructure standards (e.g. IRC's proposed

	is sympathetic (if not driving) to speak for and escort the project • be well prepared, but engage municipal staff in mutual development of details • actively educate the public through required and not-required planning meetings and open houses, media coverage, conventional marketing tools	an innovative subdivision review process/committee to streamline the processing of innovative housing proposals, or both • be vigilant about keeping everyone apprised of ADS project status, especially in-house (interdepartmentally)	National Technical Guide for Municipal Infrastructure, Green Infrastructure Program)
Market Interest or Need for Alternative Housing Forms	• conduct market studies or otherwise obtain feedback on built ADS, formally or informally • use market feedback to direct and justify further ADS proposals • get media involved to highlight and explain features and benefits • be specific about benefits • target niche markets • introduce councils and the public to the options and who really pays for infrastructure initially and in the long run	• endorse innovative housing measures, and consider endorsing housing projects that incorporate them • allow ADS projects to be built so that the market has the opportunity to view alternatives "in the flesh" and give "market interest" a chance to speak for itself • allow construction of alternative standards and more modestly serviced public facilities, and monitor satisfaction and problems • encourage staff to tour development sites to view firsthand both good and bad examples	• get more mileage out of existing research studies, innovative housing programs and demonstration projects • fuel market demand with a sustained public education program, especially through the popular press • establish a stronger presence everywhere as the information source • help councils and the public understand the options and who really pays for infrastructure initially and in the long run
Availability of Higher than Average Resources (time, energy, money)	• seek funding, recognition or 3rd party involvement to give the project financial support or official status, or both† • make municipalities aware of available support for innovation and sustainable urban development initiatives† • unify as development association to pinpoint critical issues and lobby for action • be selective about ADS sites (e.g., irregular sites, not requiring quick turn-around, minimal potential for NIMBYism) • organize key participants early, and involve early officials who may not normally get involved at the planning stage (e.g., building inspector, buried utility representatives)	• empower a municipal employee/office/committee to coordinate innovative development projects • determine explicitly the benefits of ADS, especially financial ones • borrow up front for infrastructure that will save money in the long run; by aiming to reduce long-term costs, use the money not for construction but instead for personnel (i.e., research, design and monitoring) • partially divert resources from investigating alternative funding mechanisms (e.g., user fees, creative and public-private financing mechanisms) towards determining whether the level of service to be used is fully justified	• provide clearer information about government support and funding available to innovative developers and municipalities† • develop needed tools and incentives to encourage innovation, e.g.: - direct municipal boards and appeal agencies to fasttrack innovative development proposals - permit municipalities to adjust development charges to reflect demand on services - encourage financial institutions to offer preferred rates (green mortgages) for homes that will have lower operating costs
Developer is Reputable	• consider whether reputable consultants would add confidence to the project	• consider permitting preferential treatment of "good" developers	• continue to reward exemplary building projects through awards and other programs
† Programs available include Green Infrastructure Program (FCM), Climate Change Action Fund (Environment Canada), Affordability and Choice Today (A-C-T) (FCM and CMHC), Advanced Houses and Healthy Housing (CMHC), housing awards (CMHC, Canadian Home Builders' Association and others)			

at the development site level, and indeed part of the reason why progress has been made on the on-site standards front is that the scope of individual development projects and the nature of private enterprise enables developers to take on the responsibility of educating and coordinating ADS projects. They also need to participate in the re-evaluation of off-site standards as well, which might be facilitated if less energy was spent disputing the allocation of costs between individual development projects, and more spent on working cooperatively to determine how the standards themselves should be revised.

Local governments must take ownership of revising off-site standards, which rising housing costs, land shortages, industry opinions and research studies suggest is warranted. This probably necessitates as a first step that local politicians gain some appreciation of the impact that level of service has on ongoing operating and maintenance expenses. Revision is needed despite municipalities being stuck between dwindling budgets and increased responsibilities. Perhaps the challenge to take a pro-active approach on off-site standards can actually be motivated by the need to be more careful with spending, provided help is forthcoming from upper tier governments in the form of better information on where long-term savings can be expected.

Overall, it has become clear that innovation requires a clear idea so that the commitment can be unwavering, the necessary information gathered, the right people assembled, and the process organized to unfold in way that is as uncomplicated as possible. The proponents we interviewed instinctively saw that necessary conditions had to accompany an ADS proposal (i.e., clear rationale, endurance, and receptivity of the municipality and the market), and set out to cultivate them rather than see their absence as barriers. Having identified the critical conditions, knowing that they do not have to be pre-existing, and offering an assortment of "proven" strategies that have given rise to them, a great deal of intimidation and mystery should now be removed from the prospect of pursuing ADS. Changing off-site standards is complex and requires the engagement of many groups, each of which can take steps without delay to accelerate progress.

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APPENDIX A. INTERVIEW PARTICIPANTS

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Matson, McConnell Ltd., Toronto, ON

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Ian Norris, Manager
Urban Development, City of Calgary, Calgary, AB

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Planning and Development Department, City of Surrey, BC

Gary Wright, Manager of Community Planning
Urban Development Services, Toronto, ON

APPENDIX B. INTERVIEW QUESTIONS

Page 1 - Background

Project Description

Name of Project_____
Location of Project (Municipality) _____
Project Size (Area) _____
Number and Type of Units (total for project) _____
Number and Type of Units (completed to date) _____

Preliminary Steps

Who initiated the innovative aspects of the project (developer or municipality)?
When did preliminary discussions with the municipality begin?
Who was first approached?
Did the municipality actively contribute ideas early on, or did they mainly respond to ideas proposed by you?
Did one municipal employee or department play a vital role in the early stages? If so, describe the role and its significance to the success of the project.

Formal Application

What approvals were pursued?
When was each granted?
Were any upfront studies required?
When did construction begin?

Alternative Standards Pursued

	Standard Addressed	Change Desired	Change Achieved	What was Amended?	What was the intent behind each alternative standard ?
Eg 1	*pavement width*	*from 8.8 m to 6.0 m*	*to 7.0 m*	*Stand forSubdiv Eng'ing Rds & Sewers 1988*	• *improve streetscape* • *de-emphasize car transport* • *minimize stormwater volume*
Eg 2	*backyard depth*	*from 12.0 m to 8.0 m*	*denied - no change*	—	• *widen lot to reduce garage prominence* • *improve architectural aesthetic*
#1					
#2					
#3					
#4					
#5					

Contact: Teresa Paul tel: 888 (403) 434-3603 fax: 439-7298

Page 2 - Perspectives Successfully Altering Municipal Development Standards

Question 1. For each ADS listed on Page 1:

	a) what obstacles did you expect, and how did you prepare for them?	b) what turned out to be the main points of contention/ difficulty?	c) how were these issues addressed?	d) did obstacles arise that surprised you?	e) was your preparation adequate? In hindsight, what else could you have done?
#1					
#2					
#3					
#4					
#5					

Question 2. How difficult was each alternative standard to address:

	(1) easier than expected (2) relatively straightforward (3) painstaking but worthwhile (4) too much effort for the gain	How would *you* phrase it?
#1		
#2		
#3		
#4		
#5		

Question 3. a) How satisfied are you with the end result?

b) How satisfied do you think the municipality is with the end result?

(1) more than expected (2) satisfied (3) not fully satisfied, but a step in the right direction (4) intent was lost; no net gain	

Question 4. **a)** Did the municipality have any policies or programs to support ADS prior to your application?
b) If so, what were they?
c) If so, did they contribute to the acceptance or approval of your project?

Question 5. **a)** Was it necessary to change the established standards municipality-wide, or were the standards altered for this specific project only (i.e. on a project-specific or pilot basis)?

b) If changes were made on a project-specific or pilot basis, did this approach: (select one or more)

(i) facilitate or expedite approval,
(ii) allow degree of change to be increased,
(iii) allow additional changes to be considered,
(iv) other (specify).

c) If changes were made on a project-specific or pilot basis, will the outcome be monitored in order to determine whether the ADS shall become city-wide? YES NO DON'T KNOW
If yes, who (specifically) is doing this monitoring?

Question 6. **a)** Was there an opportunity for officials to tour sites with ADS or sites with similar features?
b) If yes, who was invited, who went, and what features were displayed? How important was the exercise?
c) If not, why not, and would such as site visit have facilitated the innovative aspects of your proposal?

Question 7. Was the project affected by NIMBY'ism?

Question 8. How well did the following groups appreciate the innovativeness of the proposal?

	municipal planners	municipal engineers	councillors	public
a) What was the initial level of understanding? (1=very low 2=low 3=medium 4=good 5=very good)				
In your own words, how would you *describe* the initial reaction?				
b) What was the eventual level of understanding on a scale of 1 to 5?				
How would you *describe* the eventual level of understanding?				
c) If level of understanding changed, what *key* steps did you take to increase understanding?				
d) In hindsight, what other steps (if any) should you have taken to improve understanding?				

Question 9. **a)** How much longer did this project take to get approved than a conventional project would have?
b) Can you identify precisely where or why the delay(s) occurred?
c) How could the delay(s) have been minimized?

Question 10. Overall, what conditions, arguments or approaches were *critical* for getting the approvals required to implement the ADS proposed?

Question 11. What was most unexpected or difficult about the whole endeavour?

Question 12. Is there anything that, in hindsight, should have done differently?

Question 13. If asked, what single piece of advice would you offer to someone considering a development project proposing alternative standards?

Question 14. **a)** Overall, how satisfied are you with the final results?
b) Did the project sell better, the same or worse than a conventional development would have?

Question 15. Is there anything you would like to add at this point?

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Page 5 - Recommendations for Other Development Standards

Usually, ADS have been pursued for standards internal to the subdivision, while standards listed below have not been addressed by developers for specific subdivisions due to their complexity. Many developers, however, would like to see them addressed, which is why we are looking for your input on whether they need to be revisited and why.

Question 16. Which of the following community-scale standards should be revisited?

- ☐ schools
- ☐ parks
- ☐ stormwater infrastructure
- ☐ sanitary sewers
- ☐ watermains
- ☐ collector/arterial/regional roads
- ☐ civic (e.g. library, arts, community centres)
- ☐ other _____

Question 17. Are there lessons learned through changing development standards at the subdivision level that could be applied to the above standards?

For the standards that most concern you (i.e. items selected in Question 16):

Question 18. What do you think are the primary issues or problems? ☐ cost: capacity/over-design ☐ cost: land consumption ☐ prescriptive vs. performance-based ☐ certainty vs. flexibility ☐ requirements exceed standards ☐ time-consuming approvals process ☐ jurisdictional complexity ☐ fairness/equity/who pays ☐ environment ☐ other _____			

Question 19. a) What steps could be taken to initiate or accelerate change?			
b)Who should take the leadership role?			
c)Who else needs to be involved, and what would they do?			
Question 20. a) Is there a need for further research or information in this area?			
b)What data needs to be collected or questions answered?			

Question 21. Any further comments? (e.g. trade-offs, short versus long-term solutions, etc.)

Page 1 - Background

Project Description

Name of Project_____
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Project Size (Area) _____
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Did one municipal employee or department play a vital role in the early stages? If so, describe the role and its significance to the success of the project.

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Page 2 - Perspectives Successfully Altering Municipal Development Standards

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	a) what obstacles did the developer foresee, and how did he prepare for them?	b) what turned out to be the main points of contention/ difficulty?	c) how were these issues addressed?	d) did obstacles arise that surprised the developer?	e) did obstacles arise that surprised you?	f) was the developer's preparation adequate? What other preparation should he have done?
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	(1) easier than expected (2) relatively straightforward (3) painstaking but worthwhile (4) too much effort for the gain	How would *you* phrase it?
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